

## **Las Vegas water pipeline**

brian moench [drmoench@yahoo.com]

**Sent:**

Sunday, September 27, 2009 9:51 PM

**To:**

[snakevalley@utah.gov](mailto:snakevalley@utah.gov); [Snake Valley](#)

Dear Sirs:

Please add these comments to the official record.

The Utah Physicians for a Healthy Environment is a volunteer organization of physicians and consultants from other scientific fields like toxicology, biology, engineering and ecology. Our mission is to protect public health from the consequences of environmental degradation in Utah. We are very concerned about the proposed agreement allowing a pipeline to drain aquifers in the West Desert and ship the water to Las Vegas. So far the agreement, statements from the agencies of both states and many key elected officials appear to ignore in total, the potential for serious public health consequences.

Every resident of the Wasatch Front is all too familiar with the poor air quality that we experience about 20% of the time. Medical research is steadily expanding our understanding of the health consequences of air pollution. We have known for many years that air pollution causes the same kind of systemic inflammatory response as is caused by exposure to second hand cigarette smoke. The clinical manifestations are virtually identical.

Our current levels of air pollution cause the average person about the same health consequence as if we all lived with an active smoker or one fourth as much as if we ourselves smoked and that includes our children. The spectrum of pollution caused disease includes increased mortality rates from all causes in both adults and children, accelerated heart and lung disease, more hospitalizations, strokes, blood clots in the legs and lungs, permanently stunted lung development in children, more birth defects, premature birth, low birth wt. syndrome, and miscarriages.

In the last few years it has become well established that air pollution causes genetic damage in human embryos leading to a myriad of diseases later on in life including cancers, diabetes, atherosclerosis, immunosuppression, diminished intelligence and even Alzheimer's dementia.

Studies of even short term air pollution events demonstrate increased community wide mortality rates for as long as 30 days after episodes of pollution that last less than 24 hours and impaired lung function even in healthy people that can last at least a week after a short term pollution episode has ended. We all have observed significant dust pollution from the West Desert prior to storms moving into the state. If the Las Vegas water pipeline is built this phenomenon will become much worse as will all of the above

mentioned health impacts to Utah residents.

Nevada soils however contain unique threats beyond desert dust. Mixed into Nevada soils are significant concentrations of some of the most toxic substances on earth. On a per weight basis mercury is the second most toxic substance after plutonium, causing brain and neurologic damage even at unimaginably small concentrations. It is deposited ubiquitously throughout the environment because it is carried into the global atmosphere primarily from the stack emissions of coal power plants. It is also released during the smelting process at gold mines. Most of the gold mines in the country are in Nevada and the mercury from those mining operations concentrates in the Great Basin. Testing by the US Geologic Survey of 300 streams in the country revealed mercury contamination of every fish tested. The Great Salt Lake already has the highest concentration of mercury of any inland body of water in the United States.

Erionite is a fibrous mineral similar in microscopic configuration to asbestos and in fact causes the same kind of deadly, mesothelioma cancer that asbestos does. Erionite is found in the residue of weathered volcanic rock and it is widely distributed throughout Nevada soils. In some parts of Turkey, where it exists in high concentrations, it is the leading cause of death.

Nevada soils also contain residual radioactive isotopes from the over 900 nuclear bomb detonations that occurred in Nevada from 1951 to 1992, specifically americium, plutonium, uranium, cobalt, cesium, strontium and europium. Most of these elements are alpha emitters. One millionth of a gram can yield 1,000 alpha particles per day and each alpha particle carries over 4 million electron volts. It takes only 6-10 electron volts to break a DNA strand. This means these radioactive elements can all cause cancer and chromosomal damage especially when inhaled or swallowed even in minute quantities, like one millionth of a gram.

Valley Fever, or coccidioidomycosis, is a difficult to diagnose, sometimes chronically debilitating, occasionally fatal, fungal disease that has quadrupled in occurrence in the last ten years in some Southwestern states. It is a greater threat to immunosuppressed patients, diabetics and pregnant women. One gram of Nevada soil can contain a billion microorganisms that can carry this and other serious diseases when it becomes airborne.

As mentioned above, the storm track already brings dust from the Great Basin Desert into our airshed on a regular basis, already impacting public health in Utah. But the fragile and struggling native desert vegetation that keeps this from being even worse is already under assault from the hotter, drier conditions of climate change. Climate scientists' projections for further temperature increases and less precipitation in the decades to come are nothing short of frightening.

Meanwhile the aquifers of central and eastern Nevada and western Utah provide the main lifeline for desert vegetation in an area the size of the state of Vermont. Nevada water officials claim they will only pump "excess" water, but at the same time they acknowledge the projected water table drop will be anywhere from 50 to several hundred

ft. well below the reach of most desert plants.

Nevada authorities also claim that the consequences of groundwater pumping cannot be known prior to actually removing the water and then offer the assurance that if the results look bad to them they will stop or offer compensation. That's like saying the consequences of someone pushing you off a thousand ft cliff cannot be known until after you hit the ground, but if it the results look bad they will offer you first aid and promise not to do it again.

Water diversion projects like this have been done in other parts of the country and other parts of the world. The results have been exactly what has been predicted: more dust, more pollution, and more disease.

A water diversion project drained 90% of the Aral Sea in Uzbekistan. Tens of thousands of people have been displaced and the life expectancy of residents who remain downwind of the dust bowl, has dropped by four years due primarily to increased rates of throat and esophageal cancers. In California where the Owens Lake was drained to supply Los Angeles with water the now dry lake bed has become the largest source of particulate matter air pollution in the United States.

For the small towns, ranchers, wildlife, and plant life in the West Desert there is no such thing as excess water. For many of them the proposed pipeline agreement is a virtual death sentence. But the rest of us will see our beautiful vistas obscured and our economy and public health imperiled, all for more fountains, urban sprawl and golf courses in Las Vegas.

We trust that you will act aggressively to defend Utah citizens from this ill-conceived proposal with such profound and likely irreversible consequences.

Sincerely,

Dr. Brian Moench

President, Utah Physicians for a Healthy Environment (UPHE)

Other UPHE members

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